

# Economic and Financial Risk Prevention Model for Micro and Small Enterprises

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**Abstract.** Micro and small enterprises (MSEs) play an essential role in a country due to their economic and productive contribution. However, difficulty in accessing data means they have been less studied than large companies. In consideration of this and based on an academic literature review, this research aims to contribute to the practice through a framework for preventing financial risks in MSEs.

**Keywords:** Financial Risk, MSEs, Framework.

## 1 Introduction

The World Trade Organization identifies micro and small enterprises (MSEs) as the most crucial sector for the hiring of young people and the creation of new start-ups since they represent 60% of employment and 95% of companies worldwide [1]. MSEs provide economic and productive support for the population [2], are fundamental to a country's growth and the worldwide economy [3], are of greater importance in developing nations [4], and promote employment, competitiveness, social development, tax generation, and innovation. However, despite their importance to a country's economy and the support of government entities, MSEs have been less studied than large companies [5] due to difficulty in accessing their data and the fact they are not listed on financial markets [5], [6]. Therefore, understanding their characteristics, such as the economic risks (derived from the market) and financial risks (to their business performance) that they face, could avoid the effects of bankruptcy [7]. These difficulties limit MSEs' access to capital resources support [8], contributing to their greater sensitivity to crises or rapid and unexpected changes, such as the COVID-19 pandemic [9]. This research proposes a framework for preventing economic and financial risks in MSEs that serves as a useful guide for management decision-making. A literature review (LR) is conducted to achieve this objective, examining articles related to the financial risks facing MSEs and validating the results via a focus group comprising highly specialized experts on MSE development from the most important Brazilian institutions. The article is organized as follows: Section 2 describes

the methodology, Section 3 contains the results of the LR (taxonomy and framework), Section 4 presents the focus group results, and Section 5 contains the conclusion.

## 2 Methodology

To synthesize and refine subject knowledge [10] through formal rules and transparent procedures that generate transparency, exclusivity, and replicability in the investigation [11], the methodology in this research is structured according to the eight steps of a systematic literature review (SLR) proposed by [12]: planning and formulation of the problem; search for information; data collection; quality assessment; analysis and summary of the data; interpretation; presenting the results; and updating the review.

After formulating the research problem described in the Introduction of this paper, a literature search was performed based on four groups of keywords: Group 1, micro or small; Group 2, enterprise or company; Group 3: costs or expenses; and Group 4: risk. The Scopus and Web of Science databases were chosen, and Boolean operators were used during the database search: “TITLE-ABS-KEY (("enterpri\*" OR "compan\*") AND ("micro" OR "small") AND ("cost\*" OR "expense" OR "expenditure") AND ("risk\*"))”.

The results were limited to studies published in English that had been peer-reviewed, giving a total of 927 articles. The article titles and abstracts were then analyzed during the screening process; this enabled a rapid assessment of the essential part of the articles without delving deeper into the body of the writing and led to the exclusion of 835 articles. The first filter, “Subject area”, excluded 493 documents that had only a minor relationship with the research work—areas such as social sciences, mathematics, and energy, among others. The second filter—studies unrelated to costs or business management—excluded 28% (233) of the articles. The third filter discriminated financial studies on loans, credits, and defaults that were not based on an internal survey of the cost structure of MSEs and excluded 8% (64) of the articles. The fourth filter discarded social or political analysis risks without delving into business costs, identifying 3% (29) of the articles. The fifth filter removed articles that addressed legal issues, regulations, or norms, separating 1% (11) of the articles, and the last filter identified studies related to public companies, excluding 1% (5) of the articles.

The second stage of the exclusion process comprised a full-text analysis of the 92 articles chosen in the previous phase. In this stage, 58 articles were excluded: three studies were identified as being unrelated to the research theme, the “Subject area”; 36 were unrelated to business costs; 6 considered stock exchange companies and thus diverged from MSEs’ method of credit and financing; and, lastly, 13 articles were classified as material not available in the database, due to no possibility of them being delivered until the start date of step five of the SRL.

A taxonomic approach was adopted for the interpretation of the 34 articles selected, presented in a framework in Chapter 3. The final step contained new methods not published in previous reviews. Figure 1 summarizes the steps of the LR.

To validate the results of an LR, empirical research focuses on analyzing an object in its natural context, that is, via a focus group analysis [13]. Two workshops were held

with experts in the field of MSEs in Brazil—The Industry Federation of the State of Rio de Janeiro (FIRJAN) and the Brazilian Service of Support for Micro and Small Enterprises (SEBRAE)—to confirm the viability of the framework as a model for preventing economic and financial risks for MSEs.

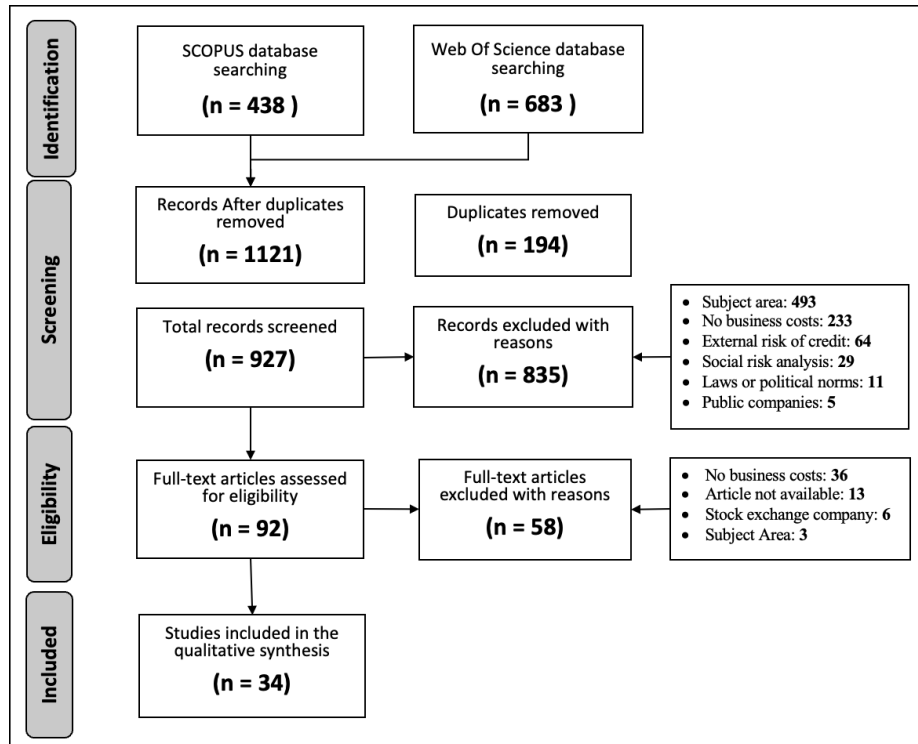


Fig. 1. Summary of the SLR exclusion processes adapted in a prism diagram flow [14].

### 3 Literature Review Results

content analysis [15]. Section 3.2 contains the framework highlighting the relationships between the categories and Section 3.3 discusses the focus group used to validate the results.

#### 3.1 Taxonomy

The criterion for organizing the 34 articles and creating a taxonomy was via an inductive approach [16], which gave rise to five modules, as shown in figure 2: Commercial Profile and Market Environment, Planning, Control, Productivity, and Risk Management.

|  |   |   |  |
|--|---|---|--|
| <b>Commercial Profile and Market Environment</b> | [18]  | Differences and structural bases to define between a commercial strategy that defends and prospect          |  |
|  | [46]  | Part of a supply chain is defining the foundations of financial strategies                                  |  |
|  | [21]  | Market risk has been identified as the most serious problem for MSEs  |  |
|  | [50]  | Due to high competition several companies cease to operate before 5 years                                   |  |
| <b>Risk Management</b>                           | [51]  | Methodology of 7 stages in the implementation of risk management.   |  |
|  | [48]  | Risk management steps and the importance in the financial field.  |  |
|  | [49]  | Theoretical tool for risk management for in 3 stages: identification, evaluation and approach.              |  |
|  | [52]  | Positive relationship in the increase of profitability as a benefit obtained in the implementation of risks |  |
|  | [50]  | The predictability of operations in risk management improves the use of resources.                          |  |
| <b>Planning</b>                                  | <b>Accounting Practices</b>   | [26]  | Information on appropriate accounting practices for the management of MSEs                             |
|  |   | [22]  | Accounting management system   |
|  |   | [24]  | Request for concrete information from banks  |
|  | <b>Capital Structure</b>  | [7]   | Results of asymmetric information and agency costs in choosing debt equity.                            |
|  |   | [27]  | Main considerations in the capital structure to characterize the economic profile of the company       |
|  |   | [15]  | Estimates based on the probability of survival as minimum capital costs                                |
|  |   | [30]  | Capital structure theories on the determinants of cash exploitation                                    |
|  |   | [5]   | Correlation of potential determinants of the capital structure   |
|  |   | [41]  | Key working capital policies and the impact of management  |
|  |   | [3]   | Family businesses have higher debt rates than non-family and persistent businesses.                    |
|  |   | [23]  | The capital structure is extended into 3 theories: taxes, agency cost, and asymmetric information      |
|  |   | [38]  | Different approaches and hypotheses for the main determinants of capital structure                     |
|  |   | <b>Control</b>  | <b>Control</b>   |
| [36]   | The differences in credit allocations between large and small businesses  |   |  |
| [34]   | Liquidity decreases the state of bankruptcy regardless of the outcome of other variables, such as profitability |   |  |
| [37]   | Calculation of the credit guarantee that analyzes the risk of default in 5 financial indices                    |   |  |
| <b>Leverage and Profitability</b>                | [32]  |   | Research with limited access to financial aid in enterprise technology innovation                      |
|  | [3]   |   | Family businesses are more leveraged and only reduce leverage if profitability increases               |
|  | [31]  |   | Negative effects of the level of leverage on innovation companies                                      |
|  | [6]   |   | Risk of the effect of operating leverage on the cost structure   |
|  | [39]  |   | negative effect of leverage on yield   |
|  | [5]   |   | Analysis of the negative relationship between Profitability and leverage                               |
|  | [27]  |   | Economic profile gives company with the theory of the order of pecking with: profitability and growth. |
|  | [38]  |   | Characteristic factors considered in the capital structure: Traducciones de characteristic nombre      |
| <b>Liquidity</b>                                 | [5]   |   | Analysis of the negative relationship between Profitability and leverage                               |
|  | [40]  |   | The impact of transaction costs and precautionary reasons closely linked to liquidity                  |
|  | [46]  | Financial risk with low cash flow management  |  |
|  | [41]  | Relationship between working capital management and liquidity levels  |  |
| <b>Productivity</b>                              | [35]  | Partnerships of contractual agreements between small and large companies                                    |  |
|  | [43]  | Strategic alliances between companies with the need to reduce costs   |  |
|  | [47]  | Outsource short-lifecycle products as a benefit of lower development cost.                                  |  |
|  | [45]  | Cost-saving collaboration and shared risk sharing between companies   |  |
|  | [44]  | The particularity of MSEs understanding the rapid changes of the market.                                    |  |
|  | [42]  | Work flexibility as a survival tactic according to the ability to recover.                                  |  |

Fig. 2. Module taxonomy structure

**Commercial Profile and Market Environment Module.** To create the ideal financial model of a company, it is necessary to consider the commercial characteristics that impact the management's decision-making to enable a better analysis of the company's financial planning [17]. [18] relate the financial characteristics of business profiles as generic strategies, adjusted to MSEs [19] as two types: prospector and defender. A prospector or leader strategy is characterized by the seeking of new opportunities through innovation, accompanied by risk and uncertainty, usually with a capital structure based on long-term external debt to maintain the liquidity of the operation, but consequently with high returns. A defender strategy differs from the prospector in that a new product is rarely introduced to the market. It adopts a conservative policy, is generally focused on price and quality, and aims for economies of scale and cost savings in process efficiency and stable performance. Besides the company strategy, all types of businesses and companies, regardless of their size, are subject to risks (economic slowdown, political uncertainty, operational errors, among others); however, these risks are higher in most MSEs since they are in the founding or beginning stage. MSEs are thus vulnerable in the face of competitive pressure, lack knowledge (technical, finance, marketing), and face challenges to market penetration [20]. [21] identify the most severe economic risks affecting the business environment of MSEs. They conducted surveys of managers and owners of MSEs in Slovakia and compared the results with research carried out in the Czech Republic, Poland, and Hungary. According to the authors, the most significant vulnerabilities among MSEs were a loss of clients, intense competition, market stagnation, and a lack of priority among suppliers.

**Planning Module.** The accounting management and the capital structure prepare the company for current and future decision-making [22], [23]. The managers' financial skills and prior experience [24] determine the gradual development of accounting management. However, there is a lack of implementation of best practices and financial tools. The financial competencies report of the Organization for Economic Cooperation and Development (OECD) (2021), covering the time of the COVID-19 pandemic, showed that only 27% of MSEs with a staff of up to nine employees had a good level of financial education [25]. Similarly, [26] mention that most MSEs in Cape Town (South Africa) make their decisions based on empirical techniques, instinct, or general rules, rendering it difficult to carry out a formalized business plan [27]. Ideally, a gradual development plan should be prepared for MSEs using standardized accounting techniques such as the Conventional Management Accounting Practices (CAMPs) [26]—such practices have been adapted for accounting management planning in MSEs, to integrate tools such as costing, budgeting, and decision-making [28]. [22] refers to the importance of creating operational indicators based on planned expenses, income, and yields, where the planned and real operational indicators (costs, revenue, and profits) must be compared and used to determine goals against an indicator in periods [24].

It is also a challenge for managers to determine the appropriate proportions of working capital between their own resources or loans. MSEs will typically suffer financial problems due to inadequate loans, the use of excessive debts to maintain the company, and inefficient capitalization [5]. [29] details that there is no universal theory or ideal standard of debt versus capital; everything depends on the risk that the firm is

prepared to assume based on its ability to generate returns. However, a series of hierarchical theories [8, 15, 21, 42] denotes that managers have a vertical order for choosing capital resources, from financing with internal capital to external resources through bank loans or share issues [30]. The sale of shares is not common among MSEs since the owners or managers do not wish to cede control or power of the administration [5]. Several empirical studies, such as the article by [5] on Brazilian SMEs, agree that the hierarchical order theory generates less debt in companies, making them more profitable [7] and that only after exhausting domestic resources will they request financing through banks [5]. It is also common for MSEs to be financed using their own resources rather than by third parties due to the high level of risk associated with being unable to generate resources and pay the accompanying debt. The disadvantage of this approach is slow growth and non-determining credit risk with a shorter debt maturity due to the financial history [7].

**Control Module.** MSEs depend on financing sources, bearing in mind that in the face of a solid return of resources, they will be dependent on more financing sources; it is thus essential to measure the level of solvency for long-term projects [27]. Therefore, there is a reluctance to invest in projects such as R&D when working solely with short-term loans [31]. Statistics show that 68% of Chinese SMEs cease operations within their first five years [32]. This lack of solvency and uncertainty leads to caution among capital lending entities over credit [27], [33] and the importance of examining firms' key financial indicators [27] using a credit model. The credit risk model emerged from banking entities [33], highlighting the study of [34], which was the basis for other investigations with different approaches and methodologies [35]. By 2004, the Banking Supervision Committee of Basel (Basel II) had differentiated loans granted to SMEs from those of other corporate entities [36], accepting internal technical risk models for each bank to use and streamlining credit management to MSEs. Investigations of financial prediction models for SMEs were put into practice by [37], using statistical techniques to conclude that five financial ratios, in terms of the union between them, are the best predictors of SME default: leverage, liquidity, profitability, coverage, and activity. Coverage is considered within the profitability indicators because it measures retained earnings, while activity is considered within the liquidity indicators for measuring the company's operating cash flow. These indicators are also used by [33], adding the factors of time, credit history, and age to improve the analysis of predicting financial problems in SMEs.

Studies related to financial leverage and profitability frequently show a strong negative relationship between long-term leverage and profitability [5], [6], [27], arguing that more leveraged MSEs are less profitable and, therefore, riskier in their debt burden [31], [38]. In the same way, younger SMEs have more intangible than physical assets [6]. Younger SMEs are also less indebted or leveraged, similar to the pecking order theory, in terms of the negative relationship between leverage and profitability since short-term debts are generally requested to avoid liabilities [27]. However, there is a positive relationship between leverage and growth due to the increase in assets [5]. For [6], it is possible to compensate for low profitability due to indebtedness if operating leverage is increased. In other words, a strategy with higher fixed costs and

lower variable costs is outlined, generating a higher profit margin per unit sold and a greater risk if sales drop. This strategy would be feasible for MSEs if low demand variability was ensured, generating better profits and stronger performance [39].

Cash capacity in MSEs is essential to meet obligations and also to take advantage of growth opportunities by investing in new products or projects [40]. MSEs must also retain a higher level of cash for prevention purposes compared to large companies [30], [40]; for instance, to compensate for low levels of profitability in times of economic crisis [7]. However, short-term working capital management minimizes liquidity by avoiding the risk of insolvency to finance long-term liabilities [41].

**Productivity Module.** Part of MSEs' competitiveness lies in the formulation of savings strategies in capital input due to the high demand for financing and the scarcity of resources in terms of the funds at their disposal [42]. These resources must therefore be used to expand their capacity and ability to adapt to rapid changes [43]. The economies of scale explained in Porter's classic book [44], namely lowering unit costs [18] in products or services, create a barrier to entry for future competitors. For MSEs, assuming the risk of scale beyond their capacity exposes them to concern over potential financial distress. This risk is reduced through strategic alliances, co-development contracts, and other types of cooperation among MSEs whose key objective is cost reduction, shared risk, and accessibility of resources [43], [45].

In the same way, large companies outsource to MSEs as a means of increasing flexibility and competitiveness [46]. [47] indicates that the dynamics of product economic cycles are generally set in Asia, demanding rapid changes, small volumes, and low costs. Even so, 60% of these strategic alliances break down, with [43] identifying incompatible intercultural problems, lack of trust, lack of clear objectives between the parties, lack of management between the teams, and relationship and results risk.

**Risk Management Module.** Considering that MSEs are sensitive to changes [21] and vulnerable as they have a weak structure from smaller capitalization due to their size [27], support methodologies are adopted to reduce risk and avoid economic losses stemming from some eventuality inherent to the actions taken [48]. For MSEs, risk management is limited to crisis management [49] due to the lack of time required for implementation [50], lack of experience, or a cost-benefit relationship [51] without being able to apply the essential standards [50]. For these cases, Krüger et al. (2021) developed a risk management tool for small businesses without actually applying it, comprising eight steps: fundamental principles, identification, audit, evaluation, treatment, planning, reports, and monitoring. Given that these tools were developed in a general way, it is useful to implement them in each module to identify, measure, and trace [49] the threats, provide stability [21], [52] to the economic framework, ensure that the risk management implementation is sustainable over time, and supply quality information to control and reassess incorrect decisions [35], [53].

### 3.2 Framework

The relationships between the groups presented in Section 3.1 are structured in a framework, as shown in Figure 3. The Commercial Profile and Market Environment Module analyzes the flow of the company based on its internal environment and the competitiveness of the product or service from an external environment perspective. It seeks to maintain stable demand where the economic part is involved, being the ideal position for the hierarchical location. Although risk is evaluated in all modules, the Risk Management Module is based on methods, models, or techniques from different contexts that support other areas to deepen specific management risks and issues. As such, these two modules are located indirectly as stakeholders to support the entire financial risk prevention process.

The Planning Module is managed based on the company's internal risks and issues, centered on the manager's decisions and responsibilities. In the Control Module, the results of past decisions are analyzed by examining the main financial indicators from credit entities (leverage, profitability, and liquidity), to obtain financing with balanced credits and promote growth and R&D projects. These financial indicators are interrelated, as evidenced by [41], where leverage is negatively related to liquidity and profitability—highlighting that the financial variable of leverage (debts) is the determinant with the most significant relationship in the capital structure [5], [27]. Finally, the Productivity Module aggregates the cooperation effort and adaptability to eventualities and proximity to the customer and improves expenditure on costs and revenues related to control indicators. However, the synergy in cooperation between the capabilities of business resources to avoid risks affects profitability due to changes in operating leverage. This module, while not a direct part of the financial flow, should nevertheless be highlighted; although it is not a stakeholder, it has a strong impact on the survival and performance of the company.

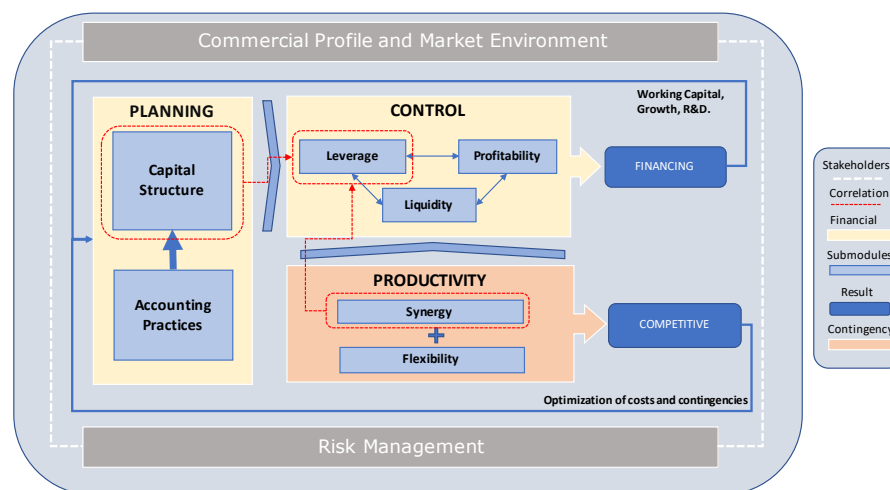


Fig. 3. Framework as an economic and financial risk prevention model for MSEs.



### 3.3 Focus Group

The research work presented in the two meetings received explicit approval concerning the model for the management of financial risk in MSEs. The important points discussed at each meeting are described in the following paragraphs.

The FIRJAN staff routinely observe MSEs with a disorganized structure in the financial part. Many firms survive through a vicious circle of loans and fail to measure the impact of this on their liquidity or the payment of taxes. For this reason, the institution, in different areas of activity, educates MSE executives via specialized courses in corporate finance and obtaining credit. FIRJAN can thus observe that the managers of MSEs are applying the standards of good accounting practices, such as the CAMPs, and the structure of control indicators within the framework to avoid making decisions that generate a vicious circle.

For SEBRAE, the framework includes the field of knowledge that it provides through different courses, and loans are granted through agreements with banks or programs. However, the impact of the Productivity Module represents an opportunity as they are not yet alert to it. From an external perspective, addressing the lack of workplaces or clusters for MSEs with tangible assets has yet to form part of a project at any institution. This type of productivity is currently supported by governments, such as coworking production spaces in Shenzhen, China [54] for rapid business development.

### 3.4 Conclusions

This study aimed to create a financial risk prevention framework for MSEs. The framework should be used as a tool, especially by owners or managers in the financial area, to help identify risks and issues and adopt measures and actions to avoid economic insecurity for MSEs.

The results of this research contribute to the practice since, through the LR, it was possible to identify and create a structural model to support MSEs' decisions and develop standards that they can apply to avoid risks and continue their business growth. The Productivity Module has by far the greatest direct impact on financial indicators by optimizing costs and making MSEs competitive. Based on these conclusions, it is suggested to continue with the study, generate a practical guide that is easy to interpret and apply, and improve the level of this research work.

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